

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)	
)	
Amendment of Part 97 of the Commission's)	
Rules Governing the Amateur Radio Service)	RM-11305
Concerning Permitted Emissions and)	
Control Requirements)	

To: The Chief, Wireless Telecommunications Bureau
VIA OFFICE OF THE SECRETARY

COMMENTS

By Donald B. Chester, K4KYV
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05 February, 2006

I have been a licensed U.S. radio amateur since August, 1959, and have held the Amateur Extra Class licence since 1963. At present, I operate my amateur station primarily on the bands between 1.8 and 29.7 mHz, using phone and CW modes.

I. Introduction

I support the fundamental goal proposed in RM-11305, to achieve a greater, more efficient utilization of frequency allocations within the amateur radio service bands. I actively operate both phone and CW modes, and I have

noticed in recent years that an imbalance has developed between the occupancy of unrestricted subbands where wideband modes including phone and image are allowed (to be subsequently referred to in this document as “phone” subbands), versus restricted subbands where only CW and narrowband data modes are permitted (to be subsequently referred to in this document as “CW” subbands). This imbalance is particularly severe in the 3.5-4.0 MHz band, but exists to a lesser degree on all HF bands below 28 MHz. From the time I first became licensed, through the early 1970’s, both the CW and phone subbands were fully occupied, but in recent years, the volume of activity in the CW portions has been steadily declining, despite the advent of new digital data modes amateurs are now using. At present, certain phone subbands frequently become severely congested during peak operating hours to the extent that it is impossible to find an unoccupied frequency where it is legal to transmit phone or image, while at the same time, vast unoccupied swaths of spectrum lie idle within the adjacent CW subband.

As a CW operator, I can appreciate the concern that narrowband weak-signal reception could be marred by the indiscriminate use of wideband modes such as SSB within portions of the bands where CW and other narrowband operation tends to congregate. I am also concerned about interference from stations that do not have a control operator monitoring the

frequency for use when they initiate operation, including both automatically and semi-automatically controlled stations.

The present system of government-mandated subbands lacks the flexibility to adjust itself to evolving trends of operation by the amateur radio community, without going through the cumbersome and time-consuming rulemaking process as prescribed under the U.S. Administrative Procedure Act (Title 5 - United States Code - Chapter 5, sections 511-599). Most countries throughout the world, including Canada, have abandoned the concept of government mandated subbands, leaving it up to the amateur radio community in each country or region to work out its own plan to segregate operating modes as deemed necessary. This Petition proposes to bring the U.S. Amateur Rules in alignment with those of the rest of the world.

II. Government mandated subbands could be replaced by volunteer band plans

The petitioners propose to discontinue mandatory segregation of emission modes and substitute a voluntary system of coordination to achieve greater and more efficient utilization of frequency allocations within the amateur radio service bands. This concept has generally worked well in the U.S. in the 1.8-2.0 MHz band which is not segmented by mode or licence

class, and there has been minimal interference to weak-signal CW operation by Canadian phone/image transmissions in the HF bands.

Weak-signal CW enthusiasts, particularly amateurs wishing to contact distant foreign stations, are justifiably worried that without some kind of segregation by emission type, wideband phone, image and digital signals would appear in the portions of the bands where weak-signal CW stations normally operate. One SSB or image transmission could simultaneously cause severe interference to as many as a dozen weak CW or other narrow-band signals.

On 8 January, 2002, the Commission released a Public Notice that Rulemaking Petition RM-10352 was requesting amendment of the rules to establish subbands by emission mode in the 1.8-2.0 MHz band, similar to the subband structure in the HF bands. This request was denied by the Commission in NOTICE OF PROPOSED RULEMAKING AND ORDER WT Docket No. 04-140, quoted in part as follows:

3. Medium Frequency Privileges.

27. The Commission authorizes amateur stations to transmit either an international Morse code telegraphy (CW) or a voice emission type on any channel in the 160 m band. Specifically, an amateur station controlled by a General, Advanced, or Amateur Extra Class amateur service licensee may transmit a CW, RTTY (radioteletype), data, phone, or image emission on any channel in the band. In order to accommodate specific operating activities, the amateur service community has developed a voluntary band plans for the 160 m amateur service band. The goal of this voluntary band plan is to minimize interference between stations simultaneously engaging in different operating activities. Voluntary band planning also allows the amateur

service community to reallocate spectrum to accommodate changes in operating interests and technologies. Prior to July of 2001, the generally recognized 160 m voluntary band plan recommended use of the 1800-1840 kHz frequency segment for CW, RTTY and other narrowband modes, and use of the 1840-2000 kHz frequency segment for phone, image and other wideband modes.

29. On September 10, 2001, Mr. Briggs and Mr. Tippet (160 m Petition) requested that we amend Section 97.305(c) in accordance with the revised voluntary 160 m band plan. Petitioners argued that the revised band plan should be mandatory rather than voluntary. In support of this request, petitioners state that the 160 m amateur band's unique propagation anomalies require the division of the band into wideband and narrowband frequency segments. Petitioners explain that such a division would greatly ease the interference that occurs between stations transmitting CW and voice emissions, particularly in the frequency segment 1800-1843 kHz during contests, and when stations are using CW to attempt long distance international communications during the night time, at sunrise, and at sunset.

30. Over five hundred twenty comments were filed in response to this petition. The majority of commenters support the petition, explaining that stations transmitting wideband and narrowband signals cannot share the same frequency segment without interfering with each other. These commenters also agree that we should set aside a segment of the 160 m for stations using CW and other narrowband emissions. Commenters also generally support a mandatory band plan, explaining that voluntary band plans may not be followed by all licensees. Other commenters agree that a mandatory band plan is needed, but suggest alternate frequency segmentation for narrowband and wideband modes.

31. On the other hand, those opposing the petition argue against setting aside frequency bands on the basis of personal operating interests. Other commenters state that weak signal CW communications is a minority operating interest that does not warrant a special frequency set-aside. In addition, some commenters believe that the proposal will not protect stations using CW from interference and aver that subdividing the band would result in inefficient use of spectrum. Moreover, some commenters generally oppose the notion of mandating a band plan.

32. Discussion. The Public Safety and Private Wireless Division (Division) previously addressed the issue of a mandatory band plan in lieu of a voluntary band plan in 1999. In the Order, the Division denied a request that it declare that any amateur radio station control operator who selects a

transmitting frequency not in harmony with those voluntary band plans is in violation of the Commission's Rules. It noted that such a result would be inconsistent with the fundamental principle of shared frequencies in the amateur service. Additionally, the Division stated that granting the request would effectively transform voluntary band plans into de facto required mandates. Rather, the Division found that because all amateur service frequencies are shared, our Rules do not assign a particular operating activity (such as using CW to attempt long distance international communications) to a specific frequency segment. Because the petitioner has not presented any unique or changed circumstances to warrant a mandatory band plan, we find no basis to disturb this fundamental principle.

33. We further believe that the recently modified voluntary band plan, which provides an additional 3 kHz of spectrum for CW and narrowband operating activities, adequately accommodates the operating interests of all licensees who use the 160 m band because it was based on input from those who use this spectrum. We note that the voluntary nature of the band plan allows amateur service licensees the flexibility to make any changes if and when they are needed to reallocate the spectrum among operating interests as new operating interests and technologies emerge or certain operating interests and technologies fall into disfavor. We also find unpersuasive the petitioner's concern that contests and special events, because they result in increased operating activity, justify a mandatory band plan. On this point, we note that participation in contests and special events is voluntary and that these operating activities are infrequent and primarily weekend or evening events. We also note that sponsors of contests, special events, and awards may choose to include in their rules a requirement that stations operate in harmony with voluntary band plans, thereby mitigating the impact of these events on other users of the band.

34. The issue of wilful or malicious interference between amateur service stations engaging in different operating activities was also previously addressed in the Order, where the Division noted that we already prohibit such interference in Section 97.101(d) of our Rules. In the absence of a showing that Section 97.101(d) no longer serves its purpose, we are not persuaded that a more comprehensive rule is necessary. Rather, we believe that cooperation between licensees, education, and compliance with Section 97.101(d) of our Rules is sufficient to minimize interference. For these reasons, we dismiss the 160 m Petition.

The Commission's assertion, as expressed in the above document, applies

equally well to the HF amateur bands between 3.5 MHz and 29.7 MHz. The

only justification to maintain government-mandated subbands that ARRL could offer in its pending Petition RM-11306 is that “*there is a strong tradition* in the United States of restricting subbands by rule rather than purely through voluntary band plans, (therefore) complete elimination of regulatory band segments and complete reliance on informal band planning does not appear to be a suitable option in the United States.” (See paragraph 11, page 9.)

III. The need for mode/bandwidth-based segmentation is no different from the need to restrict automatic and semi-automatic operation to specific band segments

Another issue of concern, specifically brought up by Rulemaking Petition RM-11306 by ARRL, is automatically and semi-automatically controlled stations that operate without a control operator present. Since the frequency is not monitored in a manner to effectively prevent these stations from causing harmful interference to other amateur stations, “listen before transmit” protocols will not be sufficient to prevent harmful interference from disrupting communications in progress. On the HF bands, one or more stations in contact might not be heard from a particular location due to propagation conditions. The semi-automatic station will see the frequency as unoccupied, and will then transmit, blocking reception by other stations that are listening to one of the stations in their group that the semi-automatic station cannot hear. Therefore, as in the case of weak-signal CW versus wide

band phone/image operation, automatically/semi-automatically controlled operation may not be compatible with other modes of operation in the amateur bands. Under the present rules, §97.221 (b) restricts automatically and semi-automatically controlled operations to specific, narrow segments of the amateur HF bands. These restrictions would be deleted under the deregulation requested under RM-11305.

In Rulemaking Petition RM-11306, ARRL is requesting that §97.221 (b) and (c) be modified to delete the limitations on automatic and semi-automatic control and to permit this operation throughout the amateur HF bands. ARRL contends that “...residual risk of interference from this station (or network) configuration can best be managed by the amateur community through a combination of technology... and respectful operating practices (which are already necessitated and practised by radio amateurs)”. (See paragraph 16, page 13, RM-11306). This assertion is essentially identical to that which is expressed in RM-11305: “Good judgement is centered on cooperative, flexible use of frequencies, with a specific goal of avoiding and/or resolving interference to others at a direct and low level, avoiding escalation and any need for outside enforcement.” In order to be consistent, if the Commission elects to delete restrictions on automatic and semi-automatic control, it must likewise delete emission/bandwidth-based subbands. Conversely, if it is deemed desirable to retain emission based subbands, then consistent policy requires that restrictions on automatic/semi-automatic

control be retained as well. ARRL's position as expressed in Petition RM-11306 is inconsistent in that it proposes to retain government-mandated segmentation to separate wideband emissions from narrowband emissions, while deleting segmentation that limits automatic/semi-automatic control to specific narrow portions of the HF bands.

IV. Existing bandwidth limitations for specific types of emission would not be affected by the elimination of subbands.

Concerns have been raised that, if the proposals contained in RM-11305 are adopted, there would be no limitation to the bandwidth of any amateur signal operating any type of emission. The elimination of subband segments would not affect maximum emission bandwidths in any way. There is presently no specific bandwidth limitation to emissions used in the Amateur Service. §97.101(a) of the rules specifies only a general requirement that each amateur station must be operated according to "good engineering and good amateur practice." §97.307(a) specifies that "No amateur station transmission shall occupy more bandwidth than necessary for the information rate and emission type being transmitted, in accordance with good amateur practice." RM-11305 merely proposes to allow these emission types to operate anywhere inside the amateur bands within the limitations of good amateur and good engineering practice, instead of being segregated by rule into certain mandated segments of each amateur band.

V. Rules addressing auxiliary station and repeater operations provide a precedent for voluntary band planning

Eliminating band segmentation by mode or bandwidth is in the spirit of deregulation and will relieve the Commission of the burden of periodically modifying the rules to accommodate changes in technology and needs. The Commission's rules alone should not be expected to prevent conflicts in HF spectrum usage between amateurs pursuing different operating interests. Responsibility for resolving conflicts in shared spectrum must be shouldered by the Amateur community itself. Voluntary band planning must be adequate and must gain broad acceptance by amateurs as the best means of protecting their individual interests. Traditionally, these cooperative methods have worked satisfactorily. To address concerns that these band plans will not be adhered to, a rule concept that has proved successful in auxiliary station and repeater coordination, can be adapted to voluntary band plans. Per §97.205 (c),

“Where the transmissions of a repeater cause harmful interference to another repeater, the two station licensees are equally and fully responsible for resolving the interference unless the operation of one station is recommended by a frequency coordinator and the operation of the other station is not. In that case, the licensee of the noncoordinated repeater has primary responsibility to resolve the interference.”

A modified version of this rule to apply to recognized band plans could be incorporated

into to Part 97 to read as follows:

“Where the transmissions of an Amateur Radio station cause harmful interference to another Amateur Radio station, the two station licensees are

equally and fully responsible for resolving the interference unless the operation of one station is in adherence with a recognized band plan and the operation of the other station is not. In that case, the licensee of the station that is not in adherence with a recognized band plan has primary responsibility to resolve the interference.”

In addition to the above rule, operation that is not in adherence with a recognized band plan and causes harmful interference could be interpreted as not operating within the general requirement of §97.101(a) that each amateur station must be operated according to “good engineering and good amateur practice.” It might also be interpreted as wilful or malicious interference in violation of §97.101(d). In this manner, under a recognized band plan, narrowband weak-signal reception would be protected from interference by wideband signals such as SSB, and general amateur operation would be protected from interference by unattended automatic/semi-automatic transmissions.

VI. The International Amateur Radio Union (IARU) has established a recognized HF band plan for ITU Region 2

At the international level, national societies throughout the world work together for the international good of Amateur Radio under the auspices of a representative democracy, the International Amateur Radio Union (IARU). Created in Paris, France, the IARU has been the watchdog and spokesman for the world Amateur Radio community since 1925. The Union has published the following band plan for ITU Region 2, which includes North and South America, the Caribbean and Greenland:

IARU Region 2 HF Band Plan

(This BAND PLAN was approved by the XIII General Assembly of Delegates of IARU Region II held at Porlamar, Margarita Island, Venezuela from September 28 to October 2, 1998)

1800 - 1830 CW, Digimode
1830 - 1840 CW, Digimode (DX CW window)
1840 - 1850 Phone (DX Phone window) - CW
1850 - 2000 Phone - CW

3500 - 3510 CW (DX CW window)
3510- 3525 CW
3525 - 3580 CW, (Phone permitted, non interference basis)
3580 - 3620 Digimode, (Phone permitted, non interference basis), CW
3620 - 3635 Packet Priority, (Phone permitted, non interference basis), CW
3635 - 3775 Phone, CW
3775 - 3800 Phone (DX Phone window), CW
3800 - 3840 Phone, CW
3840 - 3850 SSTV, FAX, Phone, CW
3850 - 4000 Phone, CW

7000 - 7035 CW
7035 - 7040 Digimode with other Regions, CW
7040 - 7050 Packet with other Regions, CW
7050 - 7100 Phone, CW
7100 - 7120 Digimode, Phone, CW
7120 - 7165 Phone, CW
7165 - 7175 SSTV, FAX, Phone, CW
7175 - 7300 Phone, CW

10100 – 10130 CW
10130 – 10140 Digimode, CW
10140 – 10150 Packet Priority, CW

14000 - 14070 CW
14070 - 14095 Digimode, CW
14095 - 14099,5 Packet, Digimode, CW
14099,5 - 14100,5 IBP/NCDXF
14100,5 - 14112 Packet, Phone, CW
14112 - 14225 Phone, CW
14225 - 14235 SSTV, FAX, Phone, CW
14235 - 14350 Phone, CW

18068 - 18100 CW
18100 - 18105 Digimode, CW

18105 - 18109,5 Packet Priority, CW
18109,5 - 18110,5 IBP/NCDXF
18110,5 - 18168 Phone, CW

21000 – 21070 CW
21070 – 21090 Digimode, CW
21090 – 21125 Packet Priority, CW
21125 – 21149,5 CW
21149,5 – 21150,5 IBP/NCDXF
21150,5 – 21335 Phone, CW
21335 – 21345 SSTV, FAX, Phone
21345 – 21450 Phone, CW

24890 – 24920 CW
24920 – 24925 Digimode, CW
24925 – 24929,5 Packet Priority, CW
24929,5 – 24930,5 IBP/NCDXF
24930,5 – 24990 Phone, CW

28000 - 28070 CW
28070 - 28120 Digimode, CW
28120 - 28189,5 Packet priority, CW
28189,5 - 28190,5 World Wide Beacon Network #2
28190,5 - 28199,5 Intra-regional Beacon Network
28199,5 - 28200,5 IBP/NCDXF
28200,5 - 28225 Beacons, CW
28225 - 28670 Phone, CW
28670 - 28690 SSTV, FAX, Phone, CW
28690 - 29300 Phone, CW
29300 - 29510 Satellites
29510 - 29700 FM Phone and Repeaters

FOOTNOTES :

1. CW is permitted on all frequencies but is exclusive where shown.
2. Digimode refers to the digital modes RTTY, AMTOR and Packet (including new systems like PACTOR and CLOVER).
3. NB (narrow band) includes all digital modes.
4. RTTY includes all digital modes.
5. Some operating frequencies may not be allowed in certain countries or may be shared on a secondary basis.

PURPOSE OF THE IARU BANDPLANS

The IARU bandplans have been compiled and modified over the years to reflect changes in operating requirements and are to be used as a guideline by the individual societies of each country. Unique situations in certain countries may require slight modification to that individual country's own bandplan but the impact of any changes must take into consideration their effect on other countries.

These bandplans are voluntary and as such cannot legally be enforced, except in some countries in which the bandplans are written into the national regulations. The vast majority of amateurs in all countries do conform to the IARU bandplans and it is in our own interest that it should continue to be this way. The plans are prepared in a democratic way with input from any country's member society. The plans are discussed, modified and voted upon at IARU Regional General Assemblies with each country (large or small) having only one vote. If an individual or group is not satisfied with the bandplans as they are and has a suggestion for improvement then he should submit it, with as much documentation as possible, to his IARU member society.

Adherence to IARU bandplans, which are recognized world-wide and have withstood the test of time for over sixty years, could be appropriately regarded by the Commission as good amateur practice. This bandplan reserves far more realistically proportioned segmentation for narrowband and wideband modes than does the present-day US amateur rules.

VII. The Commission should discontinue the Extra Class CW reservations at the low end of the HF bands.

The IARU bandplan for Region 2 reserves the lower end of each band for CW, to permit weak-signal CW communication with distant foreign stations without interference from strong local data, image and phone signals. In the United States, the lower 25 kHz of the 3.5-4.0, 7.0-7.3, 14.0-14.35 and 21.0-21.45 MHz bands is reserved for Extra class licensees. This licence class restriction precludes General and Advanced class licensees from taking full advantage of the weak-signal protection provided under the bandplan.

When the Extra class CW subband was established, the Morse code requirement for the Amateur Extra class licence was 20 words per minute.

Reserving the HF frequencies most useful for long distance international CW communication to Extra class licensees was intended to provide incentive for amateurs to attain the 20 w.p.m code speed necessary to acquire the highest grade amateur licence privileges. On 22 December, 1999, the Commission adopted the Report and Order for WT Docket No. 98-143, reducing the Morse code requirement for the Extra and General class licence to 5 w.p.m. Since the Morse code requirement for Extra Class is now the same as that for Novice, Technician, General and Advanced classes, the Extra class licence no longer provides any incentive to increase one's Morse code skills beyond the minimum requirement for the lowest class licence, therefore the Extra class CW segments no longer serve any useful purpose and should be deleted, in order to allow General and Advanced class CW operators to take full advantage of the IARU Region 2 band plan.

VIII. Conclusion

I respectfully urge the Commission to adopt the proposal requested under RM-11305, to discontinue mandatory segmentation of emission modes in the Amateur Radio Service. A voluntary system of coordination would be established to achieve greater and more efficient utilization of frequency allocations within the amateur radio service bands. Narrowband weak signal communication including long distance international CW contacts would be protected from interference generated by SSB and other wideband domestic signals, and general amateur operation would be protected from interference

generated by unattended automatic and semi-automatic transmissions, by a recognized Band Plan such as the one published by IARU for Region 2.

Adherence to the Band Plan would be assured by inserting into Part 97, rules similar to existing ones addressing auxiliary station and repeater coordination. This would be further reinforced by existing rules prohibiting deliberate interference and requiring licensees to observe good engineering and amateur practice.

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